CLAIMS

We claim:

1. An article for use in reinforcing a structural element, the article comprising:

a rigidified mesh tape having a plurality of longitudinal fibers and a plurality of lateral fibers, wherein said fibers are coated in a resin; and

a sheet removably attached to at least one side of said mesh tape, wherein said sheet when removed exposes a clean roughened surface of said mesh tape.

2. The article of claim 1, wherein said fibers are pre-cured carbon fibers.

3. The article of claim 1, wherein said lateral fibers are of a different material than said longitudinal fibers.

4. The article of claim 1, wherein said longitudinal fibers are in tension.

~~5. The article of claim 1, wherein said longitudinal fibers have a flat cross-section.~~

~~6. The article of claim 1, wherein said longitudinal fibers have an elliptical cross-section.~~

~~7. The article of claim 1, wherein said lateral fibers have a flat cross-section.~~

8. The article of claim 1, wherein said lateral fibers have an elliptical cross-section.

9. The article of claim 1, wherein said lateral fibers are generally at an angle of between 45 and 90 degrees to said longitudinal fibers.

10. The article of claim 1, wherein said lateral fibers sandwich said longitudinal fibers.

12. The article of claim 1, wherein said lateral fibers are woven to said longitudinal fibers such that said lateral fibers lie alternatingly below and above said longitudinal fibers.

13. The article of claim 1, wherein said lateral fibers are at least on one side of side of said longitudinal fibers.

14. The article of claim 1, wherein said fibers are spaced a sufficient distance apart to allow an adhesive to flow between said fibers.

15. A method for reinforcing a structural element comprising the steps of:

providing a fiber mesh tape having a removable sheet material adhered to one side;

peeling off said sheet material from said fiber mesh tape thereby exposing a roughened surface on said fiber mesh tape;

applying a bonding agent to one of a surface of said structural element and said fiber mesh tape; and

placing said fiber mesh tape on said structural element.

16. The method of claim 14, wherein the structural element is cleaned and roughened prior to placing said fiber mesh tape on the structural element.

17. The method of claim 14, wherein said bonding agent is an epoxy resin.

18. The method of claim 14, wherein pressure is applied to said fiber mesh tape such that said bonding agent flows through said fiber mesh tape thereby eliminating air pockets and thick areas of said bonding agent.

19. The method of claim 17, wherein said fiber mesh tape is embedded within said bonding agent.

20. The method of claim 14, further comprising ~~the step of~~ applying pressure to said fiber mesh tape ~~thereby~~ forcing said fiber mesh tape towards the structural element until said bonding agent retains said fiber mesh tape to the structural element.

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21. The method of claim 19, wherein ~~an~~ air impermeable strip is placed over said fiber mesh tape and is sealed to the structural element prior to application of pressure.

22. The method of claim 20, wherein a vacuum pump is used to apply a vacuum pressure to said air impermeable strip.

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